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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/725,793	11/29/2000	Urpo Nokkonen	460-009938-US(PAR)	9579

7590 09/23/2003

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EXAMINER
MILORD, MARCEAU

ART UNIT	PAPER NUMBER
2682	

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/725,793	Applicant(s) NOKKONEN ET AL.	
	Examiner Marceau Milord	Art Unit 2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 November 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 November 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Talvitie et al (US Patent No 6133884) in view of Trikha et al (US Patent No 6072993) and Sointula (US Patent No 6100847).

Regarding claim 1, Talvitie et al discloses a method for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), in which method signals of at least a first frequency range are transmitted between the unit (50 of fig. 5) and first external antenna means (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5; col. 2, line 65- col. 3, line 4; col. 4, lines 36-67), which antenna means are arranged for at least sending these first signals, and which frequency range is reserved for a first wireless data transfer connection (col. 5, lines 41- 65;col. 6, lines 4-33), signals of at least a second frequency range are transmitted between the unit (58 of fig. 5) and second external antenna means (30 of fig. 5; col. 3, lines 6- 42) , which antenna means (30, 40 of fig. 5) are arranged for at least sending these second signals, and which frequency range is reserved for a second wireless data transfer connection (col. 5, lines 41- 65;col. 6, lines 4-33), characterized in that the signals of at least the first frequency range and the signals (col. 3, lines 33- 63; col. 6, line 39- col. 7, line 44).

However, Talvitie et al does not specifically disclose the features of first frequency range and the signals of at least the second frequency range are combined for feeding them from the

unit via common coupling means to the external antennas; and the first signals are filtered from the signals received via said common coupling means for feeding them to the first external antenna and the second signals are filtered from the signals received via said common coupling means for feeding them to the second external antenna means.

On the other hand, Trikha et al, from the same field of endeavor, discloses a portable radio transceiver that transmits/receives RF signals in a first frequency band or a second frequency band. The RF signals are selectively transmitted/received via a first antenna or a second antenna. In addition, the radio transceiver has a tuning circuit that selectively presents the correct impedance to RF signals in each of the two frequency bands for signal reception/transmission carried out via the first or second antenna (col. 2, lines 10-30; col. 3, line 34- col. 4, line 11).

Sointula also discloses an antenna module for a radio, comprising a radioactive element, a filter means coupled to the radioactive element and disposed proximal to the radioactive element, and an amplifying means coupled to the filter, wherein the module further comprises coupling means for coupling the amplifying means to a radio (col. 1, line 55- col. 2, line 30; col. 3, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sointula to the modified system of Trikha and Talvitie in order to provide a portable radio transceiver for operating in two frequency bands such that the radio transceiver receives/transmits RF signals via either its own antenna or via another antenna/port connected to the radio transceiver.

Regarding claim 2, Talvitie et al discloses a method for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of

fig. 2; 50, 58 of fig. 5), in which method signals of at least a first frequency range are transmitted between the unit (20 of fig. 2; 50, 58 of fig. 5) and first external antenna means (31 of fig. 3; 30, 40 of fig. 5), which antenna means (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) are arranged for at least receiving these first signals (col. 2, line 65- col. 3, line 4; col. 4, lines 36-67), and which frequency range is reserved for a first wireless data transfer connection (col. 5, lines 41- 65; col. 6, lines 4-33), signals of at least a second frequency range are transmitted between the unit (58 of fig. 5) and second external antenna means (30 of fig. 5); which antenna means are arranged for at least receiving these second signals, and which frequency range is reserved for a second wireless data transfer connection (col. 5, lines 41- 65; col. 6, lines 4-33), characterized in that the signals of at least the first frequency range and the signals (col. 3, lines 33- 63; col. 6, line 39- col. 7, line 44).

However, Talvitie et al does not specifically disclose the features of a second frequency range received with the external antennas are combined for feeding them via common coupling means to the unit, and the first signals are filtered from the received signals for feeding them to the first radio part of the unit, which radio part is arranged for processing these signals, and the second signals are filtered from the received signals for feeding them to the second radio part of the unit, which radio part is arranged for processing these signals.

On the other hand, Trikha et al, from the same field of endeavor, discloses a portable radio transceiver that transmits/receives RF signals in a first frequency band or a second frequency band. The RF signals are selectively transmitted/received via a first antenna or a second antenna. In addition, the radio transceiver has a tuning circuit that selectively presents the correct impedance to RF signals in each of the two frequency bands for signal

reception/transmission carried out via the first or second antenna (col. 2, lines 10-30; col. 3, line 34- col. 4, line 11).

Sointula also discloses an antenna module for a radio, comprising a radioactive element, a filter means coupled to the radioactive element and disposed proximal to the radioactive element, and an amplifying means coupled to the filter, wherein the module further comprises coupling means for coupling the amplifying means to a radio (col. 1, line 55- col. 2, line 30; col. 3, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sointula to the modified system of Trikha and Talvitie in order to provide a portable radio transceiver for operating in two frequency bands such that the radio transceiver receives/transmits RF signals via either its own antenna or via another antenna/port connected to the radio transceiver.

Regarding claim 3, Talvitie et al discloses an arrangement for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5) and for transmitting signals between the communication unit (20 of fig. 2; 50, 58 of fig. 5) and the external antennas (26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5), which arrangement comprises means by which signals of at least a first frequency range are transmitted between the unit (50 of fig. 5) and first external antenna means (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5; col. 2, line 65- col. 3, line 4; col. 4, lines 36-67), which frequency range is reserved for a first wireless data transfer connection (col. 5, lines 41- 65; col. 6, lines 4-33), means by which signals of at least a second frequency range are transmitted between the unit (58 of fig. 5) and second external antenna means (30 of fig. 5), which frequency range is reserved for a second wireless data transfer connection (col. 5, lines 41- 65; col. 6, lines

4-33), characterized in that the arrangement also comprises first filter means (25 of fig. 2), which are arranged for combining at least the first signals (col. 4, line 55- col. 5, line 6) and at least the second signals and for feeding them via common coupling means to the external antennas , for filtering the first signals from the received signals for feeding them to the first radio part of the unit (85 of fig. 7), which radio part (85 of fig. 7) is arranged for processing these first signals (col. 7, lines 36-44).

However, Talvitie et al does not specifically disclose the features of filtering the second signals from the received signals for feeding them to the second radio part of the unit, which radio part is arranged for processing these second signals, and second filter means, which are arranged for combining at least the first signals and at least the second signals received with the external antenna means and for feeding them via said common coupling means to the unit, for filtering the first signals from the signals received via said coupling means for feeding them to the first external antenna means, and for filtering the second signals from the signals received via said coupling means for feeding them to the second external antenna means.

On the other hand, Trikha et al, from the same field of endeavor, discloses a portable radio transceiver that transmits/receives RF signals in a first frequency band or a second frequency band. The RF signals are selectively transmitted/received via a first antenna or a second antenna. In addition, the radio transceiver has a tuning circuit that selectively presents the correct impedance to RF signals in each of the two frequency bands for signal reception/transmission carried out via the first or second antenna (col. 2, lines 10-30; col. 3, line 34- col. 4, line 11).

Sointula also discloses an antenna module for a radio, comprising a radioactive element, a filter means coupled to the radioactive element and disposed proximal to the radioactive element, and an amplifying means coupled to the filter, wherein the module further comprises coupling means for coupling the amplifying means to a radio (col. 1, line 55- col. 2, line 30; col. 3, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sointula to the modified system of Trikha and Talvitie in order to provide a portable radio transceiver for operating in two frequency bands such that the radio transceiver receives/transmits RF signals via either its own antenna or via another antenna/port connected to the radio transceiver.

Regarding claim 4, Talvitie et al as modified discloses an arrangement for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), characterized in that the first filter means (25 of fig. 2) and at least part of the common coupling means are located in the unit (col.. 3, lines 16-42; col. 4, line 57- col. 5, line 20).

Regarding claim 5, Talvitie et al discloses an antenna arrangement for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), which is arranged for establishing a first and a second wireless data transfer connection (col. 5, lines 41- 65;col. 6, lines 4-33), and which arrangement comprises at least means for coupling first external antenna means (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5; col. 2, line 65- col. 3, line 4; col. 4, lines 36-67), to the arrangement, which antenna means (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3) are arranged for signals of a first frequency range, which is reserved for a first wireless data transfer connection (col. 5, lines 41-

65; col. 6, lines 4-33), and first connector (29 A of fig. 2) means for coupling the arrangement to the unit (20 of fig. 2), which connector means are arranged for transmitting at least said first signals between the first external antenna means and the unit (20 of fig. 2; col. 3, lines 33- 63; col. 4, lines 46- 66) characterized in that the first connector means are also arranged for transmitting signals of a second frequency range between second external antenna means and the unit (col. 3, lines 16-31), which frequency range is reserved for a second wireless data transfer connection, and which second external antenna means are arranged for said second signals (col. 5, lines 3- 44; col. 6, lines 27- 58).

However, Talvitie et al does not specifically disclose the features of a filter means which are arranged for combining at least the first and at least the second signals for feeding to the first connector means, and/or which filter means are arranged for filtering at least the first and at least the second signals from each other for feeding to said external antenna means.

On the other hand, Trikha et al, from the same field of endeavor, discloses a portable radio transceiver that transmits/receives RF signals in a first frequency band or a second frequency band. The RF signals are selectively transmitted/received via a first antenna or a second antenna. In addition, the radio transceiver has a tuning circuit that selectively presents the correct impedance to RF signals in each of the two frequency bands for signal reception/transmission carried out via the first or second antenna (col. 2, lines 10-30; col. 3, line 34- col. 4, line 11).

Sointula also discloses an antenna module for a radio, comprising a radioactive element, a filter means coupled to the radioactive element and disposed proximal to the radioactive element, and an amplifying means coupled to the filter, wherein the module further comprises

coupling means for coupling the amplifying means to a radio (col. 1, line 55- col. 2, line 30; col. 3, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sointula to the modified system of Trikha and Talvitie in order to provide a portable radio transceiver for operating in two frequency bands such that the radio transceiver receives/transmits RF signals via either its own antenna or via another antenna/port connected to the radio transceiver.

Regarding claim 6, Talvitie et al as modified discloses an antenna arrangement for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), characterized in that it also comprises cable means (28 of fig. 2) for coupling the first external antenna means (26 of fig. 2) to the antenna arrangement (col. 4, line 57- col. 5, line 20), and that the second external antenna means are integrated into said cable means (col. 6, lines 39-67).

Regarding claim 7, Talvitie et al as modified discloses an antenna arrangement for coupling external antennas (11 of fig. 1A; 26 of fig. 2; 31 of fig. 3; 30, 40 of fig. 5) to a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), characterized in that it is formed as a holder in which the unit (20 of fig. 2) is arranged to be placed, and into which the filter means (25 of fig. 2) and the second external antenna means (24 of fig. 2) are integrated (col. 4, line 57- col. 5, line 20).

Regarding claims 8-9, Talvitie et al discloses a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), which is arranged for establishing a first and a second wireless data transfer connection (col. 7, lines 36-44), and which unit comprises at least first antenna means (40 of figs. 5 and 7), which are arranged for signals of a first frequency range (col. 2, line, 65-

col. 3, line 12) which is reserved for a first wireless data transfer connection (col. 5, lines 41-65;col. 6,lines 4-33), first radio parts for processing said first signals (col. 7, lines 36-44) second radio parts for processing signals of a second frequency range, which is reserved for a second wireless data transfer connection, first connector means (29A of fig. 2) for coupling first external antenna means to the unit which antenna means are arranged for the first signals, and which connector means (29A of fig. 2) are arranged for transmitting at least the first signals between the first external antenna means (26 of fig. 2; 40 of fig. 5) and the first radio parts (col. 3, lines 16- 53; col. 6, lines 6-55) characterized in that the first connector means are also arranged for transmitting said second signals between second external antenna means and the second radio parts ,which antenna means are for the second signals (col. 3, lines 33- 63; col. 6, line 39- col. 7, line 44).

However, Talvitie et al does not specifically disclose the features of a filter means, which are arranged for combining at least the first and at least the second signals for feeding to the first coupling means, and/or which filter means are arranged for filtering at least the first and at least the second signals from each other for feeding to said radio parts.

On the other hand, Trikha et al, from the same field of endeavor, discloses a portable radio transceiver that transmits/receives RF signals in a first frequency band or a second frequency band. The RF signals are selectively transmitted/received via a first antenna or a second antenna. In addition, the radio transceiver has a tuning circuit that selectively presents the correct impedance to RF signals in each of the two frequency bands for signal reception/transmission carried out via the first or second antenna (col. 2, lines 10-30; col. 3, line 34- col. 4, line 11)

Sointula also discloses an antenna module for a radio, comprising a radioactive element, a filter means coupled to the radioactive element and disposed proximal to the radioactive element, and an amplifying means coupled to the filter, wherein the module further comprises coupling means for coupling the amplifying means to a radio (col. 1, line 55- col. 2, line 30; col. 3, lines 39-55). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the technique of Sointula to the modified system of Trikha and Talvitie in order to provide a portable radio transceiver for operating in two frequency bands such that the radio transceiver receives/transmits RF signals via either its own antenna or via another antenna/port connected to the radio transceiver.

Regarding claim 10, Talvitie et al as modified discloses a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), which is arranged for establishing a first and a second wireless data transfer connection (col. 7, lines 36-44), characterized in that the first antenna means are located in a changeable antenna module, which is arranged to be coupled to the first connector means (29 A or 29 B of fig. 2; col. 3, lines 5- 42; col. 4, line 57- col. 5, line 48)

Regarding claim 11, Talvitie et al as modified discloses a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), which is arranged for establishing a first and a second wireless data transfer connection (col. 7, lines 36-44), characterized in that the filter means (25 of fig. 2) include a diplex filter, which is coupled to the first radio part and the second radio part (col. 3, lines 32- 53; col. 4, lines 57-67).

Regarding claim 12, Talvitie et al as modified discloses a communication unit (10 of fig. 1A; 20 of fig. 2; 50, 58 of fig. 5), which is arranged for establishing a first and a second wireless data transfer connection (col. 7, lines 36-44), characterized in that it is arranged to couple

electrically said filter means (25 of fig. 2) instead of the first antenna means to the first connector means when an antenna arrangement, which is arranged to couple the first and the second external antenna means to the unit (20 of fig. 2), is coupled to said connector means (29 A or 29 B of fig. 2; col. 4, line 55- col. 5, line 20)

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pankinabo US Patent No 6140966 discloses a double resonance antenna structure for several frequency ranges.

Toncich et al USS Patent No 6473603 B1 discloses a system and method for controlling transmitted output power of autonomous hand held devices and external antenna units.

Dean et al US Patent No 5881369 discloses dual mode transceiver architecture suitable for adaptation in either a handset or a base station and capable of operating in both Frequency Division Duplex mode or in Time Division Duplexing mode.

Wallace et al US Patent No 5997314 discloses a method and apparatus for providing a dual-purpose connection for interfacing with an antenna.

Hays, III US Patent No 56119213 discloses an antenna coupler for coupling a portable radio to an auxiliary antenna to provide transmission and reception through the auxiliary antenna.

Ishikura et al US Patent No 6449499 B1 discloses a dual-mode radio communication apparatus which can make normal communication even when an external apparatus is connected to a radio communication apparatus, the communication scheme of which is set in a digital mode.

Chambers et al US Patent No 5551080 discloses a communication device including an antenna nut, which can accommodate an antenna or an antenna connector without any internal switching mechanism.

Harris et al US Patent No 5812098 discloses a single port antenna assembly, mate able with either a retractable antenna or a handling connector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marceau Milord whose telephone number is 703-306-3023. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 703-308-6739. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-305-9508 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

MARCEAU MILORD

Marceau Milord
Examiner
Art Unit 2682

September 5, 2003